



The Harbinger

Newsletter of the
Illinois Native Plant Society

Autumn 2019
Vol. 36, No. 3

“...dedicated to the study, appreciation, and conservation of the native flora and natural communities of Illinois.”



A bluestem family portrait, from L to R: *Andropogon ternarius*, *A. scoparius* (*Schizachyrium scoparium*, if you prefer), *A. gyrans*, *A. gerardii*, and *A. virginicus*. Photo and text by Vanessa Voelker.

Andropogon gerardii (big bluestem) is the State Prairie Grass of Illinois and is found across the state. *A. scoparius* (little bluestem) is also quite common and occurs in most counties. *Andropogon virginicus* (broomsedge) is a weedy species of poor, acidic soils and occurs mostly in the southern half of the state, while the petite, showy, bird-of-paradise-ish *A. gyrans* (Elliot's bluestem) is often found hiding out amid *A. virginicus* in similar habitats, although it's restricted to a few tiers of the southernmost counties. *Andropogon ternarius* is rarer, known from just a handful of southern counties.

(Photo taken at a prairie in Barton County, MO, where all five species are conveniently common!)

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Message from the President



Hi all. The monsoon was worse this year than I can ever recall. I wonder what the burn season will bring? Regardless, there is plenty of work to be done, and fun to be had saving and savoring nature in Illinois. So, here's another quarterly report, starting off on a high note.

A big thanks to everyone, our 2020 grant program fund has grown to \$11,000. Generous donations from members and the Central Chapter, combined with money left over from the annual gathering (yes, we turned a profit!) and a portion of your annual dues, all combined to increase the size of the grant fund over last year. And we are now offering two types of grants: Research Grants, like we have done in previous years; and Survey Grants that are designed to determine the status of rare, native plants in order to kickstart their recovery.

Research Grant applications will be posted on our website by Thanksgiving. The 2019 Research Grant guidelines may be viewed [online](#) now, and the 2020 application will be very similar.

Survey Grant information will be posted by shortly after Thanksgiving. The INPS grant committee is currently working with the IDNR to develop a list of imperiled native plants that we feel are most in need of survey and recovery. We will work to make sure that these surveys lead to species recovery efforts. There are too many endangered plants in Illinois quietly fading away while no one pays attention. I see this as a consummate and ongoing role for INPS as we plunge into the extinction crisis. The membership of INPS can and will make a difference in Illinois.

On a field tripping note, INPS held a successful joint field trip weekend at Indiana Dunes where native plant societies from four states convened: WI, MI, IN, and IL. Participants had a great time and decided that this will be an annual event hosted in alternate states.

Down in the sands, I found a lovely bit of prairie with scores of soapwort gentians (*Gentiana saponaria*). That seed will be mixed in with soapwort gentian seed from nearby preserves and sown back into areas supporting tiny populations. That should boost genetic diversity and allow cross-pollination in these orphaned areas.

Finally, let's all follow Gandhi's advice to "be the change you want to see in the world." It's seed collecting time in my yard, and I am always surprised at how much seed you can gather from 1,000 square feet of native garden. Time to check out the chainsaw and bar oil supplies, as cool days are upon us. Carry on.

Floyd Catchpole
President, INPS

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Check out the [Illinois Native Plant Society Events Calendar](#) for Chapter meetings and workshops.

Welcome New Members

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Kayla Chase

Olivia Clausen

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Jessamine Finch

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Phoebe Thatcher

* New Life Member

INPS News

INPS 2020 Research Grant and Survey Grant Programs Announced

Students, citizen scientists, conservation groups and institutions are alerted to consider applying for a grant ranging from \$500-\$1,500 to fund one-year projects. The grant is for research-focused studies on Illinois native plants such as life history, reproductive biology, demography, genetics, comparative site inventories, or community ecology, as well as research on threats to native plants and communities, such as invasive species. Laboratory research as well as projects focused on **research** relating to education about or restoration of native plants and plant communities will be considered. Projects involving student research or volunteers will be given special consideration. **All projects must demonstrate how they support the mission of the Illinois Native Plant Society.**

Full application details and the form for the Research Grant will be online by mid-November. Check our website at <https://ill-inps.org>.

Applications must be received by January 31, 2020. Awards will be announced by March 31, 2020.

INPS is also excited to initiate a new, second grant program this year: the **Survey Grant Program**. This grant up to \$1,500 will fund searches for Illinois Endangered, Threatened or Rare species for which current data is inadequate to assess their status and for which field surveys and recovery recommendations are needed. INPS is working with the Illinois Department of Natural Resources to develop a priority list for the surveys. Experienced botanical field surveyors, either independent or associated with an institution, are invited to apply for this grant. Partnerships are encouraged. Interested parties should watch the INPS website for the December online launch of full application details and deadlines/timelines.

INPS is grateful to be able to expand its grant programs this year thanks to contributions from membership fees, generous donations, proceeds from the Annual Gathering, and support from the Central Chapter for a grant conducting studies within the Central counties.

Save the Dates

- Next North American Prairie Conference: August 7-10, 2022. Lincoln, Nebraska. Watch this webpage for information: <https://tallgrassprairiecenter.org/2022-north-american-prairie-conference>.

CHAPTER NEWS

Northeast Chapter News

Saturday, January 18, 2020, 130PM-4PM: **Winter Hike at Wolf Road Prairie**. Join other members of the Northeast Chapter of the INPS for a little winter botanizing at Wolf Road Prairie in Westchester, Cook County. As space is limited, RSVP at your earliest convenience here: <http://bit.ly/winterwrp>. Meet at the north side of the site, at 11225 Constitution Dr, Westchester, IL. Dress for the weather! This event will take place in all but the worst weather conditions. After we hike around the prairie, depending on the group consensus, perhaps we can grab a bite to eat or hike at another nearby preserve.

4,000 Species of Vascular Plants: Meeting a Retirement Goal

By John Van Dyk.

For as long as I can remember, plants have been my friends. Already as a young boy I learned to name the trees, shrubs, and wildflowers of Holland, where I was born and raised. At that time a wonderful illustrated flora of the Netherlands was available, useful to both professionals and amateurs (I still have a copy). I spent many happy hours combing fields and woods, collecting samples, and probing dichotomous keys. Grasses and sedges became my favorites.

Emigration to Canada and later to the U.S. did nothing to squelch my interest. But it was not until 1974, when I was a graduate student (studying philosophy, not botany!), that I began a “life list” of vascular plants north of the Mexican border. The first entry was coltsfoot (*Tussilago farfara*), found in the Ithaca, NY area, and recorded on April 13, 1974. For the next 46 years the search for North American “life plants” continued, be it with intervals and lengthy interruptions.

At the time of my retirement from a teaching career ten years ago, my life list had neared 3,000. I decided to pursue a retirement goal: to reach the 4,000! By the end of last year the list topped 3,900. One more visit to the Rio Grande Valley in April, followed by an intensive botanizing excursion in the Smoky Mountains in May, netted another 75 new species. An extended June-July swing through the West clinched the project: on July 1, 2019, I entered species number 4,000 into my notebook: spreading rush (*Juncus patens*), a lovely monocot, fairly common along the Oregon coast. My retirement goal was met. Cause for celebration!



#4,000: Spreading rush (*Juncus patens*). By John Van Dyk.

Back in 1974 computers were not yet readily available. Index cards and a notebook were—and still are—my recording tools.

Every new plant receives a number and is recorded, together with date and place, in the notebook. Its number and specific name is transferred to a 3x5” “genus” card. To see whether or not a new species is already on my life list, I pull the genus card and check the species listed.

Over the years morphology has guided my decisions about what constitutes a (listable) species. If somewhere in the literature a morphologically distinct plant now considered a subspecies was at one time identified as a valid species, I listed it. Perhaps it is more accurate to consider my life list as a list of taxa rather than species.

You will ask: Are the identifications of the 4,000 species accurate? Misidentifications no doubt pepper the records, in spite of attempts to limit entries to only those determined with a high degree of confidence. But often subjective judgment seems unavoidable, especially in the not uncommon cases where the technical manuals contradict each other. And what about all the taxonomical changes, lumping, splitting and reassigning species to new genera or families?

Clearly, a major task lies ahead: review all the entries, revising and culling them according to the most recent scientific standards. A project for a snowy winter day.



John Van Dyk. By Daniel Nickrent.

Retirement goal met. Now what? Toss my manuals and undertake a new, equally exciting hobby? How does bookkeeping or accounting sound? Or go for the 5,000? A brief glance at the manuals reveals seemingly endless possibilities and persuasively invites a continued quest. In fact, I already succumbed to the temptation to forge ahead. Another visit to the Great Smoky Mountains last month delivered several dozen new plants. My current life list stands at 4,047. On the way to 5,000. And still plenty of wonderful plants to find and enjoy right here in Illinois. But will the Lord give me enough time? A little over a month ago I turned 83! Old geezer or active botanist? We’ll see.

September 19, 2019.

John Van Dyk is an amateur botanist and volunteer updating the flora of Crab Orchard National Wildlife Refuge in Marion, IL.

The Glories of Autumn – Lesser Fringed Gentian

By Mark Kluge.

“Then doth thy sweet and quiet eye
Look through its fringes to the sky,
Blue-blue-as if that sky let fall
A flower from its cerulean wall.”



Lesser fringed gentian (*Gentianopsis virgata*). By Mark Kluge.

William Cullen Bryant’s “[To the Fringed Gentian](#)” (published 1832) addressed the plant we know as *Gentianopsis crinita*, the greater fringed gentian. *Gentianopsis virgata*, the lesser (or smaller) fringed gentian, was only discovered in the Niagara region in 1831 and remains rare today. The principal difference between these species is the fringing of the lobes; *G. crinita* is fringed more deeply including the top of the corolla lobes, while *G. virgata* is fringed only on the sides of the lobes (the lobe tips are toothed, not deeply cut). The rich, almost indescribable, blue that so impressed Bryant remains one of the glories of autumn.

Rafinesque first designated this plant *Anthopogon virgatum* in 1837. James Pringle discovered that Rafinesque so annotated a specimen in John Torrey’s herbarium. When the genus *Gentianopsis* was separated from other gentians, the correct name thus became *Gentianopsis virgata*. *G. virgata* is found in wet habitats—prairie fens, pannes, interdunal hollows, and marly or calcareous flats in northeastern Illinois. The common eastern bumblebee (*Bombus impatiens*) and honeybee (*Apis mellifera*) are among its pollinators.

Forked Aster: A Plant of Mystery and Confusion

By Valerie Sivicek.

Two summers ago in early September my task was to confirm occurrence records for forked aster (*Eurybia furcata*)—among other listed species—in a handful of sites in northern Cook County. I had a few polygons and points on a map to indicate the locations of plants seen during previous surveys. Starting out this way, I found a few groups of plants, easy to distinguish from other Illinois asters by their zig-zag stems and sharply serrate

scabrous leaves. At first I counted stems, noting how many were fertile and whether herbivory was evident. I figured I might as well gather monitoring data since I had to map the plants anyway. But the task quickly grew overwhelming. I found flowering stems numbering easily into the thousands at these woodland sites, where my notes indicated the species had been seeded during restoration. I found huge rhizomatous clumps, and widely scattered smaller ones. I nearly burst into tears upon finding yet another large population one evening as it was growing dark and the mosquitos were growing fierce. Please no more!

Well, this rare species is certainly doing well here, I thought. I might have called it a weed.

I mentioned this to some of my colleagues at the Illinois Natural History Survey over coffee one Friday morning. Oh, but it doesn't produce viable seed, they said. All those plants are most likely spreading vegetatively by rhizomes, they added. So I became curious...Is this true? If so, where did the seed come from to establish these huge populations?

Habitat fragmentation has not done this species any favors. Its life history includes obligate out-crossing to facilitate the long-term viability of clonal populations, and its genetic variation is low to begin with. In pre-settlement history, local populations were probably closer together on the landscape, and there were more of them, providing the species enough genetic material to get by. Like many orchid species, forked aster seems dependent on a certain level of moderate disturbance, where light availability is high and competition is low. It won't tolerate dense shade. It's not terribly fussy about habitat otherwise. Where clonal populations are happy, they are long-lived. At these northern Illinois sites, it's thriving in managed open woodlands and along edges. Remnant populations were found along bike paths in Kane and Lake counties. But in a world of urban development, woody brush invasion, fire suppression, and deer overpopulation, forked aster faces a lot of adversity.

I asked Stephen Packard how the species was established at Somme Woods and Somme Prairie Grove preserves in Cook County, and as it happened, he had just written a [blog post](#) on the subject. The success at Somme resulted in part from adding seed from multiple populations: a remnant population in Barrington, and nearby McDonald Woods at the Chicago Botanic Garden. McDonald Woods originally had a remnant population producing non-viable seed that was also enriched with genetic material from other populations. Jim Steffen, the steward of the site, told me he collected seed from four populations across Lake County, acting on advice from James Reinartz, who, along with colleagues at the University of Wisconsin – Milwaukee, has been studying forked aster for many years. He then planted the seed in a nursery in alternating adjacent rows so pollen would be mixed as much within and across populations. The resulting plants produced plenty of viable seed that was scattered in the site. The result was the robust population I struggled to map that summer, which continues to produce viable seed.

Packard speculates in his blog post about the future of this species at Somme. Will the population continue to be robust, even to the point of bullying other species out of spaces, or is this a short boom? Will the species settle



Forked aster, *Eurybia furcata*. By Valerie Sivicek.

into a particular habitat type within the site? A 2018 study led by Holly Bernardo used population viability analysis of 14 years of forked aster monitoring data, gathered by the Plants of Concern program at the Chicago Botanic Garden, to find interaction between local factors of woody invasion and deer browse with larger-scale projected climate change. The authors suggest management of woody encroachment as the highest priority for the long-term survival of the species. While no one knows what the long term will really look like, if Packard and his team of volunteers continue to maintain healthy open woodland communities at the Somme preserves, chances are they'll continue to find forked aster in the mix.

Valerie Sivicek is a botanist with the Urban Biotic Assessment Program at the Illinois Natural History Survey.

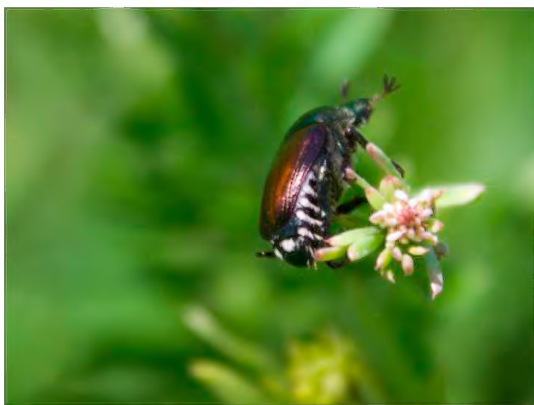
Stephen Packard's blog post: <https://woodsandprairie.blogspot.com/2019/09/what-can-this-rare-plant-teach-us-about.html>

Bernardo, H.L, P. Vitt, R. Goad, S. Masi, and T.M. Knight. 2018. Count population viability analysis finds that interacting local and regional threats affect the viability of a rare plant. *Ecological Indicators*. 93:822–829.

Japanese Beetles May Promote an Invasive Plant's Advance

By Jessica Fowler.

Silky bush clover (*Lespedeza cuneata*) is a legume from Japan that was introduced to the United States as a forage crop in 1896. Since then, the species has spread throughout much of the South and Midwest, along roadsides and in grassland ecosystems. Although sold commercially in the US, silky bush clover is considered an invasive species in parts of the US because it displaces native vegetation and changes the composition of plant communities.



Japanese beetle (*Popillia japonica*) and silky bush clover (*Lespedeza cuneata*). By Jessica Fowler.

To better understand how *L. cuneata* invades, I conducted a field experiment on a restored tallgrass prairie in Comlara Park in Hudson, IL, where silky bush clover has been spreading and increasing in abundance over the last ten years. The goal of my research was to understand whether this invasive plant promotes populations of insect herbivores that eat native plants. If so, this interaction between *L. cuneata* and herbivores could decrease the growth of native plants and enable more rapid growth by *L. cuneata*.

In 2017, I established 1-m² plots and continually removed *L. cuneata* shoots from half of the plots. Throughout the summer I collected insects to determine whether they were more abundant in plots with *L. cuneata*. Japanese beetles (*Popillia japonica*), a

particularly destructive invasive beetle, were twice as common in plots with *L. cuneata*. The following summer, I tested whether native plants experience more damage by herbivores when *L. cuneata* is present. Some native plants were eaten more in the presence of *L. cuneata*, consistent with the hypothesis that *L. cuneata* spreads in part because it promotes insect herbivory of native plants, as proposed in the refuge-mediated apparent competition hypothesis (Orrock *et al.* 2010).

Taken altogether, my results suggest that *L. cuneata* and Japanese beetles might be interacting and facilitating each other's invasions. Understanding how non-native plants invade may help inform land managers about how

to protect their natural resources, including native tallgrass prairie, one of the smallest remaining natural ecosystems of Illinois. This research was funded by the Beta Lambda Chapter of Phi Sigma and the Central Chapter of the Illinois Native Plant Society.

Orrock JL, Baskett ML, Holt RD (2010) Spatial interplay of plant competition and consumer foraging mediate plant coexistence and drive the invasion ratchet. *Proc R Soc B* 277:3307-3315
<https://doi.org/10.1098/rspb.2010.0738>

Jessica Fowler is a graduate student at Illinois State University.

Other News & Web Links

Degradation and Redemption at Langham Island

This precious nature preserve is not “out of the woods” yet. But the successes are worth a bit of jubilation. By Stephen Packard, October 7, 2019. The Friends of Langham Island are making progress toward the recovery of this valuable preserve, but more help is needed! Read this post for more information and consider putting their workdays Saturday, November 9 and Sunday, December 15 on your calendar.

<https://woodsandprairie.blogspot.com/2019/10/degradation-and-redemption-at-langham.html>.

Owners see beauty in native landscaping

By Steven Spearie, October 7, 2019. Tracy Evans admitted that the front yard of her Mechanicsburg, IL home, with clumps of big bluestem prairie grass topping out about seven feet and an array of other native plants like milkweed and coneflower, is “the reversal of curb appeal.” Since 2003, Evans’ home has been part of a Department of Natural Resources program called Illinois Acres for Wildlife, which is for small landowners.

<https://www.sj-r.com/news/20191007/owners-see-beauty-in-native-landscaping>.

Mowing Benefits Monarch Butterflies

New research from Michigan State University shows that disturbances like mowing—at key times—might help boost the iconic monarch butterfly’s numbers. The results are published in the current issue of *Biological Conservation*. Anyone with milkweed in their backyard can experiment with mowing for monarchs to enhance egg-laying success. For more information and source material, see <https://research.msu.edu/mowing-for-monarchs/>.

As an Ohio City Struggles, Some See Salvation in a Prairie

A plan to develop a parcel near Dayton International Airport is pitting conservationists against city leaders. By Kevin Williams, September 24, 2019. Some see the 140-acre Paul E. Knoop Jr. Prairie in Dayton as a field that could be repurposed for commercial use to bring a much needed economic boost to a struggling Rust Belt city. Others view it as an irreplaceable ecosystem that is part of Dayton’s identity. The prairie, which is owned by the city, is at the center of a broader debate about airport land use nationwide. The airport’s use of prairie grasses was originally seen as an innovative and inexpensive way of keeping troublesome Canada geese out of flight paths. <https://www.nytimes.com/2019/09/24/business/dayton-airport-prairie-development.html>.

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Photo: Cindy Thompson.

The Harbinger Autumn 2019

You can renew/join by filling out the form below or online at <http://www.ill-inps.org/online-membership-form/>.

Please become a member and support this local non-profit organization dedicated to the preservation, conservation, and study of the native plants and vegetation of Illinois!



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Erigenia, our scientific journal, is now available digitally as well as in print.
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I would like to help with:

- ☐ Leadership & Organization (serving on board at State or Chapter level)
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My area of expertise: _____